



AMENDMENT TO THE CLAIMS

Please replace the claims with the following complete listing of claims:

Claim 1. (*Previously Presented*) A protective article for a joint of a person's body, said article comprising:

a rigid frame adapted to cover the joint;

said rigid frame comprising:

means for allowing bending of the protective article and bending of the joint along at least one bending direction through a predetermined angle of bending, said means comprising at least one bending zone between opposed ends of the frame, said bending zone including at least one abutment with opposed edges, said opposed edges being spaced apart a predetermined amount in a first and unbent position of the protective article, and spaced apart by an amount less than said predetermined amount in a second and bent position of the protective article;

in said second and bent position of the protective article, said abutment of said means for allowing bending comprising means for limiting bending of the frame and limiting bending of the joint along said bending direction at said predetermined angle of bending;

said rigid frame having a rigidity of a magnitude to avoid hyperflexion of the joint beyond said predetermined angle of bending while the protective article is in said second and bent position.

Claim 2. (*Previously Presented*) A protective article according to claim 1, wherein:

said at least one abutment of the bending zone includes at least one notch substantially perpendicular to a bending plane; and

the notch is beveled to become closed for said predetermined bending angle so as to constitute said abutment to limit said bending of said frame.

Claim 3. (*Currently Amended*) A protective article according to claim 1, further comprising:

a flexible and substantially inextensible membrane, said frame being fixed on and overlying the membrane against movement along the membrane, the membrane ~~being~~ adapted to be located ~~on a side of~~ over the joint.

Claim 4. (*Previously Presented*) A protective article according to claim 2, wherein:

said bending zone includes an insert constituted of a compressible material positioned in said beveled notch.

Claim 5. (*Previously Presented*) A protective article according to claim 2, wherein:

said rigid frame is extended on opposite ends of the bending zone by respective supports; and

said bending zone has a thickness greater than a thickness of either of said supports.

Claim 6. (*Currently Amended*) A protective article according to claim 5, further comprising:

an envelope for enveloping the joint, said rigid frame, including said supports, being detachably positioned upon and overlying said envelope to allow the protective article to be detached from said envelope to allow the person to wear the envelope without having the protective article positioned thereupon; and

wherein at least one of said supports cooperates with a shock-absorbing element affixed to said envelope for improving control of the bending by compression in response to engagement between said rigid frame and said shock-absorbing element during said bending.

Claim 7. (*Previously Presented*) A protective article according to claim 6, wherein:

said shock-absorbing element is positioned in a pocket affixed to said envelope; and
a portion of said rigid frame extends into said pocket for said engagement.

Claim 8. (*Previously Presented*) A boot incorporating a protective article according to claim 1, wherein:

said rigid frame is positioned, in an area of an ankle of a foot, on a front surface of the foot.

Claim 9. (*Previously Presented*) An assembly for binding a foot to a sports apparatus incorporating the protective article according to claim 1, wherein:

said rigid frame is positioned, in an area of an ankle of a foot, on a front surface of the foot.

Claim 10. (*Withdrawn*) A glove incorporating the protective article according to claim 1, wherein:

said rigid frame is positioned, at an area of a wrist of a hand, on a top of the hand.

Claim 11. (*Withdrawn*) A protective article according to claim 1, wherein:

said rigid frame is positioned, in an area of a knee, on a front surface of the leg.

Claim 12. (*Withdrawn*) A protective article according to claim 1, wherein:

said rigid frame is positioned on a spine and especially in an area of the neck, on the back.

Claim 13. (*Currently Amended*) A boot according to claim 8, wherein:

the boot includes a boot-tightening means extending over the rigid frame; ~~and~~
wherein

said rigid frame includes at least one cooperating mechanism complementary of and
engaged with said boot-tightening means.

Claim 14. (*Previously Presented*) A boot according to claim 8, wherein:

the boot includes a shell supported on a sole; and

the rigid frame includes a front support fixed on said shell over an instep area.

Claim 15. (*Previously Presented*) A boot according to claim 14, wherein:

said shell includes a recess in an area for accommodating toes of a wearer.

Claim 16. (*Previously Presented*) A protective article according to claim 1, wherein:

said predetermined angle, for an ankle, has a value comprised between +30° and +45°.

Claim 17. (*Previously Presented*) A protective article according to claim 5, wherein:

said bending zone is narrower than said supports.

Claim 18. (*Currently Amended*) A protective article according to claim 1, wherein:

the frame overlies and is fixed on a flexible ~~and substantially inextensible~~ membrane
against movement along the membrane;

the membrane is a substantially inextensible membrane during bending of the
protective article between said unbent position and said bent position.

Claim 19. (*Currently Amended*) A sports apparatus comprising:

an envelope adapted to be worn by a person by being placed over a joint of the person;

a protective article for protecting the joint from hyper-flexion, said protective article comprising a frame detachably mounted ~~with respect to~~ overlie said envelope to allow the person to wear the envelope without the protective article;

the frame having a length extending ~~length-wise~~ along a bending plane between a first end and a second end;

said frame having at least one bending zone between said first and second ends, and first and second support areas on opposite ends of said bending zone;

said frame being more rigid, at least in said bending zone, than said envelope;

said bending zone having a flexibility adapted to allow bending of the frame in a bending direction within said bending plane through a range of bending during use of the sports apparatus between an initial position of the frame and a maximum bent position of the frame;

said frame further comprising at least one abutment comprising at least one beveled notch between a pair of opposed edges within said bending zone, said pair of opposed edges being spaced apart a widest extent in said initial position of the frame, said pair of opposed edges being movable relative to each other in said bending direction from said initial position of the frame to said maximum bent position of the frame, said pair of opposed edges not being further movable in said bending direction to thereby define a maximum bending of the frame and the joint at an end of said range of bending in said bending direction;

said frame having a rigidity, at least in said bending zone, sufficient to prevent said bending of said frame at said bending zone beyond said range of bending during use of the sports apparatus and to avoid hyper-flexion of the joint.

Claim 20. (*Currently Amended*) A sports apparatus according to claim 19, wherein:

~~said at least said one abutment comprises a notch extending~~ beveled notch extends
substantially perpendicular to said bending plane;

at a beginning of said range of bending said notch is open, and at an end of said range
of bending said notch is closed.

Claim 21. (*Currently Amended*) A sports apparatus according to claim 19, wherein:

~~said at least said one abutment comprises a notch having~~ beveled notch has abutment
surfaces extending substantially perpendicular to said bending plane;

said abutment surfaces of said abutment are not engaged at a beginning of said range
of bending, and said abutment surfaces of said abutment abut at an end of said range of bending.

Claim 22. (*Currently Amended*) A sports apparatus according to claim 19, wherein:

~~said at least said one abutment comprises a notch extending~~ beveled notch extends
substantially perpendicular to said bending plane;

a compressible insert is positioned within said notch, said insert being fully
compressed at an end of said range of bending.

Claim 23. (*Currently Amended*) A sports apparatus according to claim 19, wherein:

~~said abutment comprises a notch, said notch not extending~~ beveled notch does not
extend entirely through said frame.

Claim 24. (*Canceled*)

Claim 25. (*Currently Amended*) A sports apparatus according to claim 19, further comprising:

a bendable and substantially inextensible base distinct of said frame;

said frame ~~being~~ overlies said base and is fixed against sliding movement along said base.

Claim 26. (*Previously Presented*) A sports apparatus according to claim 19, wherein:

said bending zone has a thickness greater than a thickness of either of said support areas of said frame.

Claim 27. (*Previously Presented*) A sports apparatus according to claim 19, further comprising:

a shock-absorbing element positioned for engagement with said frame, said shock-absorbing element being compressible during bending of said frame.

Claim 28. (*Previously Presented*) A sports apparatus according to claim 27, further comprising:

a pocket;

said shock-absorbing element being positioned within said pocket.

Claim 29. (*Previously Presented*) A sports apparatus according to claim 19, wherein:

the protective article is adapted to protect an ankle against hyper-flexion; and

said range of bending has an end value at said maximum bent position no greater than between 30° to 45° from a beginning value at said initial position, said beginning value corresponding to a said pair of opposed edges of said at least one abutment at said initial position of the frame.

Claim 30. (*Previously Presented*) A boot comprising:

an upper having a high portion and a low portion, the high portion adapted to extend higher than an ankle of a wearer and the low portion adapted to extend along an instep of the wearer;

a frame comprising a tibia support, an instep support, and a bending zone between the tibia and instep supports, said frame being detachable from the boot to allow the wearer to wear and to use the boot without the frame;

said bending zone of said frame having a flexibility adapted to allow bending of said tibia support in a bending direction relative to said instep support within a bending plane through a range of bending, said range of bending comprises an angle of movement of no greater than 45°;

said frame further comprising at least one abutment comprising at least one beveled notch between a pair of abutting edges within said bending zone, said pair of opposed edges being movable in said bending direction from initial positions relative to each other to limiting positions in which said pair of opposed edges are not further movable in said bending direction to thereby define a maximum bending of the frame at an end of said range of bending in said bending direction;

said frame having a rigidity, at least in said bending zone, sufficient to prevent said bending of said frame at said bending zone beyond said range of bending during use of the boot when said pair of opposed edges are in their limiting positions.

Claim 31. (*Previously Presented*) A boot according to claim 30, wherein:

said beveled notch extends substantially perpendicular to said bending plane;

at a beginning of said range of bending said notch is open, and at an end of said range of bending said notch is closed.

Claim 32. (*Previously Presented*) A boot according to claim 30, wherein:

said beveled notch has abutment surfaces extending substantially perpendicular to said bending plane;

said abutment surfaces of said notch are not engaged at a beginning of said range of bending, and said abutment surfaces of said notch abut at an end of said range of bending.

Claim 33. (*Previously Presented*) A boot according to claim 30, wherein:

said beveled notch extends substantially perpendicular to said bending plane;

a compressible insert is positioned within said notch, said insert being fully compressed at an end of said range of bending.

Claim 34. (*Currently Amended*) A boot according to claim 30, wherein:

said beveled notch does not extend entirely through said frame.

Claim 35. (*Previously Presented*) A boot according to claim 30, wherein:

said frame is more rigid than said upper.

Claim 36. (*Previously Presented*) A boot according to claim 30, further comprising:

a bendable and substantially inextensible base;

said frame being fixed against sliding movement along said base.

Claim 37. (*Previously Presented*) A boot according to claim 30, wherein:

said bending zone has a thickness greater than a thickness of either of said supports of said frame.

Claim 38. (*Previously Presented*) A boot according to claim 30, further comprising:

a shock-absorbing element positioned for engagement with said frame, said shock-absorbing element being compressible during bending of said frame.

Claim 39. (*Previously Presented*) A boot according to claim 38, further comprising:

a pocket;

said shock-absorbing element being positioned within said pocket.

Claim 40. (*Currently Amended*) A boot according to claim 30, wherein:

said upper comprises a longitudinal opening and a tongue extending across the longitudinal opening; and

said frame is fixed to said tongue.

Claim 41. (*Previously Presented*) A protective article according to claim 1, wherein:

said rigid frame is made of a material defining a continuous outer periphery along a length and width of the protective article.

Claim 42. (*Previously Presented*) A sports apparatus according to claim 19, wherein:

said frame is made of a material defining a continuous outer periphery along a length and width of the protective article.

Claim 43. (*Previously Presented*) A boot according to claim 30, wherein:

said frame is made of a material defining a continuous outer periphery along a length and width of said frame.

Claim 44. (*Previously Presented*) A protective article according to claim 2, wherein:

said at least one notch comprises a plurality of notches spaced apart in said bending zone, said limit of said bending of said frame being caused by an accumulation of bendings at each of said plurality of spaced apart notches.

Claim 45. (*Currently Amended*) A sports apparatus according to claim 19, wherein:

said at least one beveled notch comprises a plurality of beveled notches spaced apart length-wise of said frame along said bending zone, said maximum bent position of said frame being determined as an accumulation of bendings at each of said plurality of spaced apart notches.

Claim 46. (*Currently Amended*) A boot according to claim 30, wherein:

said at least one beveled notch comprises a plurality of beveled notches spaced apart in a direction length-wise of said frame along said bending zone, said maximum bending of said frame being determined as an accumulation of bendings at each of said plurality of spaced apart notches.

Claim 47. (*Currently Amended*) A boot comprising:

an upper having a high portion and a low portion, the high portion adapted to extend higher than an ankle of a wearer and the low portion adapted to extend along an instep of the wearer;

a frame comprising a tibia support, an instep support, and a bending zone between the tibia and instep supports, said frame being detachable from the boot to allow the wearer to wear and to use the boot without the frame, said bending zone having a thickness greater than a thickness of both of said supports of said frame;

a flexible and substantially inextensible membrane, said frame being fixed on the membrane against movement along the membrane;

said bending zone of said frame having a flexibility adapted to allow bending of said tibia support in a bending direction relative to said instep support within a bending plane through a range of bending, said range of bending comprises an angle of movement of no greater than 45°;

said frame further comprising at least one abutment comprising a pair of opposed edges within said bending zone, said pair of opposed edges being movable in said bending direction from initial positions relative to each other to limiting positions in which said pair of opposed edges are not further movable in said bending direction to thereby define a maximum bending of the frame at an end of said range of bending in said bending direction;

said at least said one abutment ~~comprises~~ comprising a notch extending substantially perpendicular to said bending plane, said notch not extending entirely through said frame;

a compressible insert ~~[[is]]~~ being positioned within said notch, said insert being fully compressed at an end of said range of bending;

said frame having a rigidity, at least in said bending zone, sufficient to prevent said bending of said frame at said bending zone beyond said range of bending during use of the boot when said pair of opposed edges are in their limiting positions.

Claim 48. (*New*) A protective article according to claim 2, wherein:

said rigid frame is made of a material defining a continuous outer periphery along a length and width of the protective article, said notch not extending entirely through a width between transverse sides of the rigid frame.

Claim 49. (*New*) A boot according to claim 47, wherein:

said rigid frame is made of a material defining a continuous outer periphery along a length and width of said frame, said notch not extending entirely through a width between transverse sides of the rigid frame.

Claim 50. (*New*) A protective article according to claim 1, wherein:

said frame has a length extending in a direction between said opposed ends of the frame, said length being greater than a width between opposed transverse sides of the frame.

Claim 51. (*New*) A sports apparatus according to claim 19, wherein:

said length of the frame is greater than a width between opposed transverse sides of the frame.

Claim 52. (*New*) A boot according to claim 30, wherein:

said length of the frame is greater than a width between opposed transverse sides of the frame.

Claim 53. (*New*) A boot according to claim 47, wherein:

said upper includes a longitudinal opening extending in said high and low portions of the upper;
a tongue is positioned beneath the upper and extends across said longitudinal opening;
said frame is mounted upon said tongue;
a lacing extends across said longitudinal opening above said frame and above said tongue.

Claim 54. (*New*) A boot according to claim 30, wherein:

said frame has a length extending in a direction between said tibia and instep supports;
each of the tibia and instep supports has an inner surface adapted to face the tibia of the wearer and the instep of the wearer, respectively, and an opposite outer surface;
each of the tibia and instep supports has a thickness between the inner and outer surfaces and a length extending in said direction of said length of the frame;
the length of said tibia support is greater than the thickness of said tibia support, and the length of said instep support is greater than the thickness of said instep support.